

43. In the Texas arbitration dockets, FCC standards in the Local Competition First Report and Order⁴⁶ required separation of the signaling network from the switching network. The Texas PUC approved interim rates that are similar to Ameritech's signaling system rate structure. STP port (node) rates were approved on a per-port-per-month basis, rather than on the per-message basis that some petitioners desired. However, the approved interim rates for signaling links were usage-sensitive (per-octet-per-STP-pair). Dedicated signaling links, for the same reasons as dedicated transport or dedicated switch line ports, were approved as flat rates. Costs of processing or switching signaling information at the end office or tandem level were included in the local switching costs on a usage-sensitive basis. When costing elements of the ILEC network rather than services that may or may not use signaling functions, the rate structure approved by the Texas PUC in the arbitration dockets is the most appropriate.

III. Approach to Access Rate Reform and Deregulation

44. In sections IV through VI of the Notice, the FCC outlines two alternative approaches to access reform: a market-based approach and a more prescriptive approach, and the FCC requests comment on numerous aspects relating to both approaches.

45. Under the market-based approach, the FCC proposes letting marketplace pressure move interstate access prices to competitive levels. This approach could be implemented incrementally, first eliminating certain regulatory constraints as incumbent price cap LECs demonstrate through credible, verifiable evidence that the conditions necessary for efficient local competition to develop in their service areas exist. Then, as incumbent LECs show that competition has emerged, additional regulatory constraints, including mandatory rate structures,

⁴⁶ CC Docket No. 96-98, *In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, First Report and Order, FCC 96-325, §51.319.

would be eliminated to allow those LECs to adjust their interstate access rates. Finally, when substantial competition has developed, price regulation would be eliminated.⁴⁷

46. The FCC notes, however, that some parties may contend that a market-based approach will allow incumbent LECs to continue indefinitely to assess inflated prices for some or most access services in some or most geographic areas and that these parties would urge them to adopt a prescriptive approach to access reform. Under this approach, the FCC would require incumbent LECs to move their prices to specified levels and allow such LECs limited pricing flexibility until they can demonstrate they face actual competition for access.

A. Recommendation of the Texas PUC

47. In general, the Texas PUC advocates use of a prescriptive approach initially, with transition to a market-based approach when true competition exists.

48. The FCC states that its primary goal in this proceeding is to adopt changes to the existing access charge rules “that will foster competition for these services and eventually enable marketplace forces to eliminate the need for price regulation of these services.”⁴⁸ The Texas PUC agrees that this is an objective that the FCC should attempt to achieve, but respectfully suggests that the overriding, immediate goal during this period of transition to competition should be to shape the access charge system in such a way that removes implicit subsidies to the universal service system as required by FTA96 §254(b)(5).

49. Although the Texas PUC strongly favors market-based solutions, we are concerned that the market-based approach as proposed in this Notice is insufficient to eliminate implicit

⁴⁷ Notice, ¶140.

⁴⁸ Notice, ¶140.

subsidies and bring about access rates that are based on economic cost as quickly as desired. We agree with the opinion that a market-based approach, by itself, may allow ILECs to indefinitely assess inflated access charges,⁴⁹ thus maintaining implicit subsidies prohibited by the Act in §254(b)(5). We are not suggesting, however, that a prescriptive approach, by itself, is the appropriate solution in the long run.

50. The Texas PUC has embraced the procompetitive aspects of both the FTA96 and our own PURA95, but recognizes that competition in local exchange markets is not yet present in Texas. As many have observed, the transition to meaningful competition in telecommunications is the greatest challenge facing regulation today. It is unknown when a truly competitive environment, in which numerous providers will be able to offer a variety of services at competitive prices, will in fact emerge; it could in fact take years for such a market to develop. The fact that the interexchange market in Texas (which has been open to competition for more than a decade) can be best characterized as a “tight oligopoly”⁵⁰ demonstrates that substantial competition does not come about immediately once barriers to entry are removed. Similarly, although it is possible that the removal of the most immediate barriers to competitive entry to local markets could be called “potential competition,”⁵¹ some might argue that the tight oligopoly present in Texas IXC market represents only “potential competition” even at this late date.

51. Regulators must act with caution during transition periods from monopolies to competitive markets since “potential competition” is, by definition, not actual competition. The Texas PUC, therefore, has reservations about the effects on consumers if regulations on ILECs,

⁴⁹ Notice, ¶141.

⁵⁰ Public Utility Commission of Texas, *Report to the 75th Texas Legislature on the Scope of Competition in Telecommunications Markets*, January 1997, p. 141.

⁵¹ Notice, ¶163.

which undoubtedly possess significant market power, are loosened too quickly during the transition to competition, without sufficient regulatory oversight. The Texas PUC believes that reforming access charges with a prescriptive method until “true competition” actually develops is an appropriate regulatory approach for access reform.

52. The Texas PUC recognizes, however, that measurement of when “true competition” is present (and therefore the trigger point at which regulations should be lifted) is a difficult task. In preparing its biennial *Report to the Seventy-Fifth Legislature on the Scope of Competition in Telecommunications Markets*,⁵² the Texas PUC staff used both the Hirshman Hirfindahl Index (HHI) and the four-firm concentration ratio to evaluate the status of competition in the Texas interexchange market. The Texas PUC would support use of these or comparable measures of market share in analysis of the status of competition in local markets.

53. One of the recurring themes in the Notice is that whenever a service or a geographic area served by an ILEC is found to be substantially competitive, market forces should replace regulatory controls for that service or geographic market. We wish to offer our concern, however, that consumer and competitive safeguards must continue to be employed so long as the ILEC is providing both competitive and non-competitive services from the same ledger. It would be an ideal situation to carve out the competitive area or service, such as has been done through Part 64 accounting safeguards for other deregulated markets, and maintain a clear separation to avoid the possibility of predation and cross-subsidization. It would be virtually impossible to perform such an accounting separation for each access service or geographic area as it is found to be substantially competitive. If, as proposed, the market is allowed to set a (presumably lower)

⁵² Public Utility Commission of Texas, *Report to the 75th Texas Legislature on the Scope of Competition in Telecommunications Markets*, January 1997, p. 141.

service price where there is competition, then the service provider would experience pressure to increase prices in less competitive areas to maintain the existing revenue stream. We therefore urge the FCC to consider the impact of the proposed market-based approach on the less-competitive services and areas served by the ILEC. It may be necessary to establish price floors (TELRIC) for competitive situations, while specifying rate caps or rate linkage for less competitive situations.⁵³

B. Prescriptive Access Reform - Pricing Method

54. The FCC seeks comment on its tentative conclusion that interstate access rates should be based on "...some form of TSLRIC [-based] pricing method."⁵⁴ The Texas PUC believes that the correct approach to calculating access rates is to base them on forward-looking economic costs rather than embedded costs. Company-specific costs could be used, such as TSLRIC or TELRIC, or a generic cost model could be used. The Texas PUC believes that it may be more appropriate to use a company-specific cost computation on which to base access rates, so long as it can be properly inspected and verified, because access rates are company-specific rates. We support the use of proxy methodologies, such as the Hatfield or BCM models as they continue to evolve, for establishing geographically deaveraged cost approximations for the purpose of universal service targeting. However, we have concerns that these models in their current forms may not produce results as suitable for pricing purposes as company-specific studies.

55. Although the Texas PUC considers its Subst. R. §23.91 to be a TSLRIC rule and has used the guidelines and principles of the rule to determine costs and set rates in some cases, we

⁵³ For example, the rate for a service in a non-competitive area might be set no higher than some percentage higher than the rate charged in competitive areas or the rate for a less competitive access service might be set no higher than some percentage higher than the rate charged for a comparable access service subject to greater competition.

⁵⁴ Notice, ¶222.

believe it is more appropriate to use TELRIC instead of TSLRIC to compute access rates. The fact that access services are services and not functions would lead one to conclude that it is more appropriate to cost services using TSLRIC rather than TELRIC. However, services are largely combinations of elements, and TELRIC can be used to cost the elements underlying the services. This concept is reasonable, as the purchasers of the access services will likely be telecommunications carriers who pay TELRIC-based rates in a non-access environment for unbundled network elements that are used to provide access services. Rates based on TELRIC for both access and non-access unbundled network elements will lead to less confusion, eliminate artificial price disparities for identical network elements, and more easily ensure ILECs have an opportunity to recover forward-looking common costs (although, theoretically, a mixture of TSLRIC and TELRIC-based rates, if calculated using similar common cost allocation principles, should produce the same revenue results for the ILEC). To base rates on TELRIC rather than TSLRIC, the FCC would simply have to design a rate structure around interstate access elements rather than services.

56. The FCC seeks comment on what parties should be responsible for evaluating the ILECs' LRIC studies for each price cap basket.⁵⁵ Regardless of the LRIC methodology used to calculate access costs and rates, each state commission should be given the option to be responsible for analyzing the cost data specific to the ILECs it regulates. Over the past two years, the Texas PUC staff has had extensive hands-on experience with BNF and TSLRIC cost studies filed pursuant to the Texas costing rule, and in the last six months has gained considerable expertise in analyzing TELRIC studies. PURA95⁵⁶ gives guidelines on how to use the results of

⁵⁵ Notice, ¶224.

⁵⁶ In addition, the proposed Texas PUC pricing rule, which is being developed in Project No. 12771, will implement PURA95's pricing guidelines. This rule will be adopted by April 1, 1997.

TSLRIC and/or TELRIC studies to set rates. In addition, the staff of a state commission would be better equipped to make decisions regarding the most appropriate forward-looking technologies and network designs of the ILECs in its state given that population densities, terrain characteristics, etc., vary significantly from state to state.

57. The FCC seeks comment as to whether or not access rates would decrease if adjusted to TSLRIC.⁵⁷ In Docket No. 16300,⁵⁸ Texas PUC staff recognized that most transport and termination rates would be well below the access rates if rates were based on TELRIC plus an allowance for forward-looking common costs. The TELRIC-based interim rates set in this proceeding were, for the most part, far below the access rates for the company. Because TSLRIC generally can be expected to be equal to or less than TELRIC, rates equal to TSLRIC also would be far below access rates. If some unitary allocation of common cost were added onto TSLRIC, most of the rates still would be far below access rates.⁵⁹

58. The allocation of common costs, upon which comment was requested by the FCC⁶⁰, is best based upon a single forward-looking common cost allocation factor. In the arbitration dockets, both the ILEC and the petitioners agreed that not only would a single forward-looking common cost allocation factor be administratively efficient, it would also be competitively neutral. With every element picking up a share of common cost based on a percentage of the direct costs of the element, no provider would be unduly disadvantaged because of the particular elements it buys. Also, the ILEC would not be able to load more common costs onto more essential

⁵⁷ Notice, ¶227.

⁵⁸ *Joint Application of AT&T Communications of the Southwest, Inc. for compulsory Arbitration to Establish an Interconnection Agreement Between AT&T, GTE Southwest, Inc. and Contel of Texas, Inc.*

⁵⁹ As stated previously, if calculated using the same principles of allocation, TSLRIC and TELRIC may be roughly the same.

⁶⁰ Notice, ¶238.

elements to discourage entry. In addition, because it cannot be said that common costs are caused more or less by any one element, it would be difficult to justify requiring one element's rates to recover more common costs than another element's rates.

59. In the arbitration dockets, the Texas PUC staff proposed a common cost allocation factor determined by dividing the ILEC's overhead by the ILEC's total Texas revenues (regulated and unregulated⁶¹). The Texas PUC has not adopted such a factor at this time.⁶² However, the Texas PUC supports a methodology for computing a general forward-looking common cost allocation factor that is based on forward-looking overheads and revenues. A factor based on such forward-looking information should be used as it would generally not cause rates to rise so high above direct cost as to no longer really be cost-based.⁶³

IV. Transition Issues

60. The FCC seeks comment on various transition issues. Specifically, the Notice seeks comment on the manner in which the universal service support amounts attributable to the interstate jurisdiction should reduce interstate access rates. The FCC also addresses issues relating to the potential difference between the revenues that incumbent LECs generate from current interstate access charges and the revenues that revised access charges are likely to generate, and the FCC seeks comment on both the estimated magnitude of that difference and the extent to which alternative methods of recovery of that difference should be permitted.

⁶¹ Revenues are used in the denominator because it is assumed that on a forward-looking basis, a purely competitive company's expenses will equal its revenues. Both regulated and unregulated revenues are used because the nature of common costs makes it such that they are used to support both regulated and unregulated services.

⁶² Questions of how to properly allocate joint and common costs in setting permanent rates in these arbitration dockets are still pending. Petitioners have been asked to spend more time analyzing LEC cost studies and offer refinements to the methodology used to calculate the forward-looking common cost allocation factor.

A. Universal Service Issues

61. The FCC recognizes that, because of the role that access charges have played in funding and maintaining universal service, it is critical to implement changes in the access charge system together with complementary changes in the universal service system because circumstances under which incumbent LECs could be compensated twice for providing universal service may exist.⁶⁴ The Texas PUC agrees that any access charge reform must be carefully reviewed along with universal service in order to ensure that no “double recovery” occurs.

62. The FCC proposes a downward exogenous cost adjustment to reflect revenues received from any increase in universal service support.⁶⁵ The Texas PUC generally agrees with this proposal to the extent that it attempts to avoid any double recovery of costs. However, it must be recognized that, if adopted, this would be the first time USF funds would have been used to offset interstate rates. Currently, universal service support is applied to the reduction of revenue requirements for primarily intrastate services. We are concerned that the use of universal service funds to reduce interstate access charges has the potential to divert funds traditionally used to support intrastate high costs. We agree with the observation that such a shift in jurisdictional support must only be accomplished through a recommendation of a federal-state joint board.

63. Under the Federal-State Joint Board’s Recommended Decision,⁶⁶ there will continue to be support for high-cost rural areas of the nation, which would be evidenced as payments to support intrastate services. There is also a need for a separate component within the

⁶³ In the arbitration dockets that have gone before the Texas PUC thus far, most reasonable estimates of this factor have been between 10 and 20 percent.

⁶⁴ Notice, ¶244.

⁶⁵ Notice, ¶245.

⁶⁶ *In the Matter of Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Recommended Decision, FCC 96J-3.

universal service mechanism that will replace the explicit subsidy reflected in the common line elements of interstate access charges. To the extent that the revised universal service mechanism has separate components for both high-cost assistance for intrastate services and a specifically-identified component for interstate common cost recovery, the needs of both jurisdictions appear to be addressed.

B. Treatment of Any Remaining Embedded Costs Allocated to the Interstate Jurisdiction

64. Current interstate access service revenues permit recovery of the interstate portion of embedded costs, subject since 1991 to the constraints of price cap regulation. The FCC notes that revenues generated if all access services were priced at forward-looking, economic cost may be much smaller than revenues received today. The FCC asks parties to discuss, in light of the other reforms discussed in this proceeding and other developments pursuant to the FTA96, the following issues: the amount and make-up of the difference between these amounts, whether recovery of the remaining interstate-allocated costs should be permitted, the lawfulness of a denial of such recovery, and possible recovery mechanisms.⁶⁷

65. The FCC notes that some of the difference between the incumbent LECs' interstate-allocated embedded costs and forward-looking costs may be traced to past regulatory practices. For example, interstate access rates may exceed forward-looking economic cost, and thus produce some difference, because of misallocation of costs to the interstate jurisdiction.⁶⁸ Another possible regulatory cause of any difference between interstate-allocated embedded or

⁶⁷ Notice, ¶248.

⁶⁸ Notice, ¶249.

accounting costs and forward-looking costs may be under-depreciation of incumbent LEC assets.⁶⁹

66. This proceeding to reform access charges raises a number of questions concerning jurisdictional cost separations. Clearly, the beginning point for developing access charges is the total cost that has been assigned to the interstate jurisdiction through Part 36 of the Commissions rules. The Texas PUC is concerned with what appears to be at least a tentative conclusion regarding jurisdictional cost allocation in this proceeding (that there may be a “misallocation of costs to the interstate jurisdiction”) without having the benefit of a recommendation by a federal-state joint board on this key separations issue. The Notice states that the FCC intends, in the near future, to initiate a proceeding to address the separations issues raised by incumbent LEC provision of unbundled network elements.⁷⁰ The Texas PUC urges the Commission to proceed with the referral of all issues related to jurisdictional separations arising from the implementation of FTA96 to the “main” federal-state joint board in CC Docket No. 80-286.

67. As repeated throughout these comments, the Texas PUC supports the use of forward-looking economic costs in pricing access services. We agree that there may be a substantial difference between embedded and LRIC costs. We have not determined, as a matter of policy, whether any such embedded costs may be traced to past regulatory practices and whether such costs should be recovered through traditional rate mechanisms, and therefore we will not offer a recommendation to the FCC in this regard. In the event that the FCC determines that all or a portion of the remaining embedded costs should be recovered, we recommend, in order to avoid the continuation of implicit subsidies, that the recovery be made through a separately earmarked fund.

⁶⁹ Notice, ¶250.

⁷⁰ Notice, footnote 340.

V. Conclusion

68. The Texas PUC recognizes the immense task before the FCC in working to complete its trilogy of actions that are collectively intended to promote competition in telecommunications markets pursuant to the 1996 Act. In these comments we have sought to provide the FCC with the insight regarding costing of networks that we have gained while working to promote telecommunications competition in Texas. In addition, we have relayed some concerns we have about the FCC's proposed approaches to access charge reform and related transition issues. We look forward to continuing a productive state-federal partnership to bring the benefits of competition to all consumers as quickly as possible.

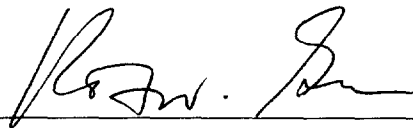
Respectfully submitted,

Public Utility Commission of Texas
1701 N. Congress Ave.
P.O. Box 13326
Austin, Texas 78711-3326

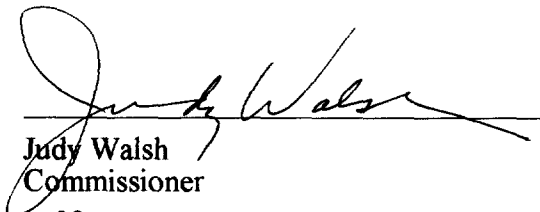
January 22, 1997



Pat Wood, III
Chairman



Robert W. Gee
Commissioner



Judy Walsh
Commissioner

Attachment A

Public Utility Commission of Texas Substantive Rule §23.91

Long Run Incremental Cost Methodology for ILEC Services

§23.91 Long Run Incremental Cost Methodology for Dominant Certificated Telecommunications Utility (DCTU) Services.

- (a) **Application.** This section shall apply to DCTUs with annual revenues from regulated telecommunications operations in Texas of \$100 million or more for five consecutive years. An incumbent local exchange carrier that is not a Tier 1 local exchange company as of September 1, 1995, at that company's option, may adopt the cost studies approved by the commission for a Tier 1 local exchange company.
- (b) **Purpose.** This section shall be used to determine the long run incremental costs incurred by DCTUs in the provision of telecommunications services. The costs determined in this section shall not be used to determine a company's revenue requirement during a proceeding pursuant the Public Utility Regulatory Act of 1995, §3.210 or §3.211.
- (c) **Definitions.** The following words and terms when used in this section shall have the following meaning unless the context clearly indicates otherwise.
- (1) **Ancillary Services** — The category of basic network functions (BNFs) (as defined in paragraph (2) of this subsection) that provide for certain activities that either support or otherwise are adjuncts to other BNFs or finished services. This category of BNFs consists of three subcategories of BNFs: Billing and Collection; Measurement; and Operator Services.
 - (A) **Billing and Collection** — The subcategory of BNFs that provide for the function of compiling the information needed for customer billing, preparing the customer bill statement, disbursing the bill and collecting the customer payments.
 - (B) **Measurement** — The subcategory of BNFs that provide the functions of assembling, collating and transmitting end office switch recorded call data (occurrence and duration).
 - (C) **Operator Services** — The subcategory of BNFs that provide for the provision of a number of live or mechanized assistance functions to aid customers in the following ways: obtaining customer telephone number, street address and ZIP code information (directory assistance); providing new telephone numbers or explanatory information to callers who dial numbers which have been changed or disconnected (intercepts); providing assistance to customers in completing operator handled toll or local calls (collect, credit card, third party, station-to-station or person-to-person); checking busy lines to make sure the line is not out of service (busy line verification); and interrupting busy lines (busy line interruption). These Operator Services are provided to end user customers as well as local exchange and interexchange carriers.
 - (2) **Basic network function (BNF)** — A discrete network function, which is useful either as a stand-alone function or in combination with other functions, for which costs can be identified.
 - (3) **Capital costs** — The recurring costs that result from expenditures for plant facilities that are capitalized. The annual capital costs consist of depreciation, cost of money, and income taxes.
 - (4) **Categories of BNFs** — All BNFs shall fall into one of four categories of BNFs. The categories are: Network Access (as defined in paragraph (18) of this subsection); Switching and Switch Functions (as defined in paragraph (20) of this subsection); Dedicated and Switched Transport (as defined in paragraph (10) of this subsection); and Ancillary Services (as defined in paragraph (1) of this subsection).
 - (5) **Common costs** — Costs that are not directly attributable to individual cost objects. For the purposes of this section there are three types of common costs: general overhead costs; costs common to BNFs; and costs common to services.
 - (A) **General overhead costs** — Costs incurred in operating and managing the company that are not directly attributable to BNFs or services.

- (B) **Costs common to BNFs** — Costs incurred in the provision of BNFs that can not be directly attributed to any one BNF individually but only to a category or subcategory of BNFs collectively.
- (C) **Costs common to services** — Costs incurred in the provision of two or more services that do not vary with changes in the relative proportions of the outputs of those services. Common costs are not directly attributable to any one service individually but only to a group of services collectively. In the event a BNF is used in the provision of two or more services then the volume insensitive cost of the BNF is a cost common to the services that use the BNF. However, if the technological requirements for the provision of one service alter the least cost technology choice for common BNFs or common facilities, then the increase in costs caused by the requirements for more advanced technologies is not a common cost but a cost directly attributable to the service that alters the least cost technology choice.
- (6) **Cost causation principle** — The principle that only those costs that are caused by an activity (such as a network function, service, or group of services) in the long run are directly attributable to that activity. Costs are caused by an activity, in the long run, if the costs are brought into existence as a direct result of the activity.
- (7) **Cost driver** — A specific condition, under which a BNF is provided, whose change causes significant and systematic changes in the cost of providing a BNF. For example, if the cost of providing a Network Access Channel varies with the density and size of a wire center, then density and size are cost drivers for that BNF.
- (8) **Cost of debt** — The rate of interest paid on borrowed money.
- (9) **Cost of money** — The weighted annual cost to the DCTU of the debt and equity capital invested in the company.
- (10) **Dedicated and Switched Transport** — The category of BNFs that provide for dedicated or shared transmission transport between two or more DCTU switching offices or wire centers. This BNF category consists of two subcategories of BNFs: Dedicated Transport and Switched Transport.
 - (A) **Dedicated Transport.** — The subcategory of BNFs that provide for full period, bandwidth specific (e.g., DS-0, DS-1, DS-3) interoffice transmission paths between the originating and terminating points of channel connection.
- (11) **Depreciation expenses** — The charges based on the depreciation accrual rates designed to spread the cost recovery of the property over its economic life.
- (12) **Expenses** — Costs incurred in the provision of services that are expensed, rather than capitalized, in accordance with the Uniform System of Accounts applicable to the carrier.
- (13) **Group of services** — A number of separately tariffed services that share significant common costs (as defined in paragraph (5) of this subsection) that are necessary and unique to the provision of those services and are not directly attributable to any one service individually. This term also refers to a situation in which two or more groups of services are part of a larger group of services because of significant common costs that are necessary and unique to the provision of all the services in the group but are not directly attributable to any one group or service individually.
- (14) **Least cost technology** — The technology, or mix of technologies, that would be chosen in the long run as the most economically efficient choice. The choice of least cost technologies, however, shall
 - (A) be restricted to technologies that are currently available on the market and for which vendor prices can be obtained;
 - (B) be consistent with the level of output necessary to satisfy current demand levels for all services using the BNF in question; and
 - (C) be consistent with overall network design and topology requirements.
- (15) **Long run** — A time period long enough to be consistent with the assumption that the company is in the planning stage and all of its inputs are variable and avoidable.
- (16) **Long run incremental cost (LRIC)** — The change in total costs of the company of producing an increment of output in the long run when the company uses least cost technology. The LRIC should exclude any costs that, in the long run, are not brought into existence as a direct result of the increment of output.
- (17) **Measure of unit cost** — The measure of usage used to calculate unit cost for a particular BNF (for example, a minute of use of a switching function, or a quarter mile of a DS-1 Network Access

- Channel). The measure of unit costs may be multidimensional; for example, it may have both time and distance components. The measure of unit cost chosen for a BNF shall correspond to the basis upon which the costs of that BNF are incurred.
- (18) **Network Access** — The category of BNFs that accommodate access to other network functions provided by DCTUs. Access is accomplished by transmission paths between customers and DCTU wire centers. This category consists of three subcategories of BNFs: Network Access Channel; Network Access Channel Connection; and Channel Performance and Other Features and Functions.
 - (A) **Network Access (NA) Channel** — The subcategory of BNFs that provide the transmission path between the point of interface at the customer location and the main distribution frame, or equivalent (e.g., DSX-1, DSX-3), of a DCTU wire center.
 - (B) **Network Access (NA) Channel Connection** — The subcategory of BNFs that provide the interface between the Network Access Channel and the DCTU wire center switching equipment, subsequent dedicated transport equipment (dedicated interoffice circuits), or subsequent channel equipment (dedicated intraoffice circuits).
 - (C) **Channel Performance and Other Features and Functions** — The subcategory of BNFs that provide the channel functions associated with transmission or service type (e.g., analog, digital, coin, ISDN), bandwidth conversion, signaling, multiplexing, amplification, and channel performance.
 - (19) **Significant** — For the purposes of this section, the qualifying term significant is used to refer to instances in which costs or changes affect total study results by at least five percent. This general guideline for when costs or changes are significant may be relaxed by considering the cumulative effect of either including or excluding costs or changes from a study.
 - (20) **Subcategories of BNFs** — Groupings of closely related BNFs in a category of BNFs.
 - (21) **Switching and Switch Functions** — The category of BNFs that provide for switched access between two or more Network Access Channels or between Network Access Channels and other BNFs, such as interoffice transport. This function is accomplished through the establishment of a temporary transmission path between Network Access Channels in the same switching office; between a Network Access Channel and the interoffice facilities that interconnect switching offices; or between a Network Access Channel and other BNFs. This BNF category shall cover the first point of switching for a customer. This BNF category consists of three subcategories of BNFs: Interoffice Switching; Intraoffice Switching; and Switching Features.
 - (A) **Interoffice Switching** — The subcategory of BNFs that provide for: switching between Network Access Channels and Switched Transport facilities which are connected to different wire centers; and switching between Network Access Channels and Switched Transport facilities when a tandem switch is used as the first point of interface to the DCTU switched network (e.g., connection of facilities from an interexchange carrier's point of network interface).
 - (B) **Intraoffice Switching** — The subcategory of BNFs that provide for switching between two or more Network Access Channels within the same wire center.
 - (22) **Unit cost** — A cost per unit of output calculated by dividing the total long run incremental cost of production by the total number of units.
 - (23) **Volume sensitive costs** — The costs of providing a BNF that vary with the volume of output of the services that use the BNF.
 - (24) **Volume insensitive costs** — The costs of providing a BNF that do not vary with the volume of output of the services that use the BNF.
- (d) **General principles.**
- (1) Underlying the construction and application of this section is the recognition that the DCTU network consists of a finite number of BNFs that, when bundled in various combinations, can be used to deliver and market a vast variety of telecommunications services. Therefore, the determination of the cost of a service and the costs of a group of services under this section shall involve the identification and costing of BNFs.

- (2) The LRIC studies that the DCTU is required to file under this section shall assume that the company is operating in the long run and employs least cost technologies, as those terms are defined in subsection (c) of this section.
 - (3) In order to obtain accurate LRIC study results, the DCTU shall avoid the use of embedded cost data; expense items and capital costs shall reflect long run incremental costs and the DCTU shall justify any instance in which embedded cost data are used. Further, the fact that the costs determined under this section may differ from the company's embedded costs as determined during proceedings under the Public Utility Regulatory Act of 1995, §3.210 or §3.211, should in no way cause the company to attribute any of this cost discrepancy to LRIC studies for BNFs, services, or groups of services.
 - (4) The appropriate methods for service pricing and recovery of the revenue requirement will be developed in the rulemaking proceeding mandated under subsection (p) of this section.
 - (5) When a BNF is used in the provision of two or more services then the volume insensitive cost of the BNF is a cost common to the services (as defined in subsection (c)(5)(C) of this section) that use the BNF.
 - (6) When services share significant common costs (as defined in subsection (c)(5)(C) of this section), none of the common costs shall be included in the LRIC studies for the services individually; instead, the company shall identify which services share the common costs and attribute the cost recovery responsibility of these costs to the group of services collectively. Specifically, the individual LRIC studies for residential and business basic local exchange service, as these services are tariffed on the effective date of this section, shall exclude any volume insensitive costs associated with the use of the Network Access Channel Basic Level (as defined in subsection (e)(1)(A) of this section) and Network Access Channel Connection Basic Level (as defined in subsection (e)(2)(A) of this section).
 - (7) When two or more groups of services share common costs, none of the common costs shall be included in the LRIC studies for groups individually; instead, the company shall identify which groups share the common costs and assign the common cost recovery responsibility of these costs to these groups collectively.
 - (8) Nothing in this section is intended to either endorse or reject the DCTU's current rate and tariff structures.
- (e) **Identification of Basic Network Functions.** The DCTU shall identify for each subcategory of BNFs the relevant and separately identifiable BNFs. The determination of the appropriate degree of aggregation of network components, functions, or activities into separately identifiable BNFs shall be consistent with the principles described in subsection (d) of this section. Furthermore, in choosing BNFs, the DCTU shall seek to minimize the number of network components, functions, or activities that are not included in BNFs. In addition to BNFs the company identifies under this subsection, the company shall identify for each subcategory of BNFs the following prescribed BNFs:
- (1) **Required BNFs for subcategory Network Access (NA) Channel:**
 - (A) **NA Channel Basic Level:** A transmission path which provides less than 1.544 Mbps digital capability. This includes 300 to 3,000 Hz analog voice service.
 - (B) **NA Channel DS-1 Level:** A transmission path which has 1.544 MBPS digital capability.
 - (C) **NA Channel DS-3 Level:** A transmission path which has 45 MBPS digital capability.
 - (2) **Required BNFs for subcategory NA Channel Connection:**
 - (A) **NA Channel Connection Basic Level:** An interface for channels which provide less than 1.544 Mbps digital capability. This includes the interface for 300 - 3,000 Hz analog voice service which is the basic interface for most voice grade services such as: basic local residential and local business service, PBX trunks, Centrex-type access lines and voice grade dedicated transport service. In addition, this category includes the interface for four frequency bandwidths provided for audio channels such as: 200 to 3,500 Hz, 100 to 5,000 Hz, 50 to 8,000 Hz and 50 to 15,000 Hz. Also included in this BNF are the interfaces for low speed data transmission at speeds of 2.4, 4.8, 9.6, 56 Kbps and all other speeds below the T-1 rate of 1.544 Mbps. This interface is for narrowband service.

- (B) **NA Channel Connection DS-1 Level:** An interface for 1.544 MBPS digital transmission channels. This interface connects high capacity wideband transmission channels which operate in a full duplex, time division (digital) multiplexing mode.
- (C) **NA Channel Connection DS-3 Level:** An interface for 45 MBPS digital transmission channels. This interface connects broadband transmission channels which operate in full duplex, time division (digital) multiplexing mode.
- (3) **Required BNFs for subcategory Channel Performance and Other Features and Functions:**
 - (A) **Standard signaling and transmission level capabilities.** Signaling and transmission level capabilities suitable for a wide variety of network services and applications associated with the BNF NA Channel Basic Level, as defined in paragraph (1)(A) of this subsection.
 - (B) **Nonstandard signaling and transmission level capabilities and other features.** Signaling and transmission level capabilities and other features and functions, other than those defined in subparagraph (A) of this paragraph, such as high voltage protection, multiplexing, and bridging. The company is encouraged to disaggregate this BNF into smaller BNFs that capture the variety of features and functions available to customers.
- (4) **Required BNFs for subcategory Interoffice Switching: Interoffice Switching.** The type of switching that provides for: switching between Network Access Channels and Switched Transport facilities which are connected to different wire centers; and switching between Network Access Channels and Switched Transport facilities when a tandem switch is used as the first point of interface to the switched network (e.g., connection of facilities from an interexchange carrier's point of network interface).
- (5) **Required BNFs for subcategory Intraoffice Switching: Intraoffice Switching.** Switching between two or more Network Access Channels served from the same wire center.
- (6) **Required BNFs for subcategory Switching Features:**
 - (A) **Hunting Arrangements.** An optional function available to customers with multiple local exchange access lines in service.
 - (B) **Custom Calling Features.** Various optional features which provide added calling convenience.
 - (C) **Central Office Automatic Call Distribution.** The provision of call distribution as an integrated function of certain electronic central offices equipped to provide this capability. This function permits an equal distribution of a large volume of incoming calls to predesignated groups of answering positions, referred to as agent positions.
 - (D) **Central Office Based PBX-Type Functions.** A business communications system furnished from stored program control central offices that provides the equivalent of customer premises PBX services through the use of central office hardware and software as well as through network access facilities from the central office to the customer premises. Included in this BNF shall be only hardware specific to this type of service, processor or memory usage involved in special features for this type of service, and any software or software right to use fees associated with this type of service. This BNF should exclude any network functions that are already identified as other BNFs.
- (7) **Required BNFs for subcategory Dedicated Transport:**
 - (A) **Dedicated Transport Termination.** An interface which provides for the transmission conversions (e.g., multiplexing) required between channel connection and dedicated transport facilities.
 - (B) **Dedicated Transport Facility.** The full period, bandwidth specific (e.g., DS-0, DS-1, and DS-3), interoffice transmission paths established between two points of dedicated transport termination.
- (8) **Required BNFs for subcategory Switched Transport:**
 - (A) **Switched Transport Termination.** An interface which provides for the transmission conversion (e.g., multiplexing) required between the switching function and switched transport facilities.
 - (B) **Switched Transport Facility.** The temporary interoffice transmission paths established between two points of switched transport termination.

- (C) **Switched Transport Tandem Switching.** The intermediate points of switching used as an economic surrogate to direct routing of interoffice facilities in the provision of switched transport.
- (9) **Required BNFs for subcategory Billing and Collection: Billing and Collection.** The function of compiling the information needed for customer billing, preparing the customer bill statement, disbursing the bill and collecting the customer payments (this includes any collection activities required for late payment or non-payment of billing amount due).
- (10) **Required BNFs for subcategory Measurement: Measurement.** The function of assembling, collating and transmitting end office switch recorded call data (occurrence and duration).
- (11) **Required BNFs for subcategory Operator Services: Operator Services.** The role of providing a number of live or mechanized assistance functions to aid customers in the following ways: obtaining customer telephone number, street address and ZIP code information (directory assistance); providing new telephone numbers or explanatory information to callers who dial numbers which have been changed or disconnected (intercepts); providing assistance to customers in completing operator handled toll or local calls (collect, credit card, third party, station-to-station or person-to-person); checking busy lines to make sure the line is not out of service (busy line verification); and interrupting busy lines (busy line interruption). These Operator Services are provided to end user customers as well as local exchange and interexchange carriers.
- (f) **LRIC studies for individual BNFs.**
- The DCTU shall perform a LRIC study for each of the BNFs identified under subsection (e) of this section. The company shall perform the LRIC studies consistent with the principles described in subsection (d) of this section. Additionally, the company shall use the following instructions in determining the LRIC for individual BNFs.
- (1) **Relevant increment of output.** For the purposes of this subsection, the relevant increment of output, as that term is used in subsection (c)(16) of this section, shall be the level of output necessary to satisfy total current demand levels for all services using the BNF in question. Adjustments to total service output may be made to reflect the presence of new services for which demand levels can demonstrably be anticipated to increase significantly over the course of six months.
- (2) **Relating expenses to BNFs.** The company shall avoid the use of embedded cost data and shall determine expenses consistent with the principles of long run incremental costing.
- (A) **Common expenses.** Common expenses that are not directly attributable, using the cost causation principle, to the BNF shall be excluded.
- (B) **Nonrecurring expenses.** The expenses of nonrecurring activities shall be separately identified.
- (C) **Taxes.** Any tax expenses not directly attributable, using the cost causation principle, shall be excluded from the LRIC study for individual BNFs. Specifically, taxes associated with the provision of services that use more than one BNF shall not be included in the BNF LRICs.
- (3) **Least cost technology.** LRIC studies shall assume the use of least cost technology. The choice of least cost technologies, however, shall:
- (A) be restricted to technologies that are currently available on the market and for which vendor prices can be obtained;
- (B) be consistent with the level of output necessary to satisfy current demand levels for all services using the BNF in question; and
- (C) be consistent with overall network design and topology requirements.
- (4) **Network topology.** LRIC studies shall use the existing or planned network topology.
- (5) **Cost of money.** When the company uses the most recent commission approved rate of return for the company, as that term is used in §23.21(c)(1) of this title (relating to Cost of Service) there will be a presumption of reasonableness. The company shall justify the use of any other rate.
- (6) **Rate of depreciation.** When the company uses the most recent commission approved rate of depreciation for the company there will be a presumption of reasonableness. The company shall justify the use of any other rate.

- (7) **Measure of unit cost.** LRIC studies shall identify the appropriate measure of unit cost for a BNF (e.g., minutes of use, access line). The measure of unit cost chosen for a BNF shall correspond to the basis upon which the costs of the BNF are incurred. The measure of unit cost may be multidimensional; for example, it may have both time and distance components. In identifying the appropriate measure of unit cost, the company shall ignore the current rate structure for tariffed services using the BNF.
- (8) **Determination of unit cost.** Using the measure of unit cost identified under paragraph (7) of this subsection, the company shall calculate unit cost for the BNF based on the assumption of full capacity utilization of the BNF, which should allow for any spare capacity due to lumpy investments or technical requirements, such as spare capacity needed for testing. The unit cost shall be calculated based on the volume sensitive costs of the BNF and exclude all costs that are volume insensitive (as those terms are defined in subsections (c)(23)-(24) of this section).
- (9) **Determination of volume insensitive costs.** The company shall calculate the volume insensitive costs (as defined in subsection (c)(24) of this section) for the BNF.
- (10) **Cost drivers.** LRIC studies shall identify and account for all relevant cost drivers. LRIC studies for certain BNFs shall at a minimum account for the cost drivers specified below.
 - (A) **Cost drivers for NA Channel Basic Level, NA Channel DS-1 Level, and NA Channel DS-3 Level.** The LRICs for these BNFs shall systematically account for variations in costs caused by variations in
 - (i) the density of a wire center;
 - (ii) the size of a wire center; and
 - (iii) the distance.
 - (B) **Cost drivers for NA Connection Basic Level, NA Connection DS-1 Level, and NA Connection DS-3 Level.** The LRICs for these BNFs shall systematically account for variations in costs caused by variations in
 - (i) the density of a wire center; and
 - (ii) the size of a wire center.
 - (C) **Cost drivers for Intraoffice Switching and Interoffice Switching.** The LRICs for these BNFs shall systematically account for variations in costs caused by variations in
 - (i) the density of a wire center;
 - (ii) the size of a wire center; and
 - (iii) the time of day.
 - (D) **Cost drivers for Dedicated Transport Facilities and Termination.** The LRICs for these BNFs shall systematically account for variations in costs caused by variations in
 - (i) the size of a wire center; and
 - (ii) the distance.
 - (E) **Cost drivers for Switched Transport Facilities, Termination and Tandem Switching.** The LRICs for these BNFs shall systematically account for variations in costs caused by variations in
 - (i) the size of a wire center;
 - (ii) the distance; and
 - (iii) time of day.
 - (F) **Cost drivers for Measurement.** The LRIC for this BNF shall systematically account for variations in costs caused by variations in
 - (i) the density of a wire center;
 - (ii) the size of a wire center;
 - (iii) the time of day; and
 - (iv) the duration of a call.
 - (G) **Cost drivers for Operator Services.** The LRIC for this BNF shall systematically account for variations in costs caused by variations in the type of operator services calls.
- (g) **LRIC studies for tariffed services.** The DCTU shall perform a LRIC study for each tariffed service, except those services for which a waiver has been granted under the workplan approved under

subsection (m) of this section. Each LRIC study for a tariffed service shall be calculated as the sum of the costs caused by that a service's use of BNFs and any other service specific costs associated with functions not identified as separate BNFs, such as expenses of billing, service specific advertising and marketing, and service specific taxes. Each LRIC study for a tariffed service shall be consistent with the principles described in subsection (d) of this section. Additionally, the company shall use the following instructions in determining the LRIC for individual tariffed services:

- (1) **Mapping of BNFs and costs to tariffed services.** The LRIC study shall identify the BNFs that are used in the provision of the tariffed service; the long run incremental costs for the tariffed service shall include the costs associated with this usage. The costs associated with the service's use of a BNF shall be calculated as the product of the unit cost for the BNF (as determined under subsection (f)(8) of this section) and the demand of the service for that BNF.
 - (2) **Identification of other costs.** The LRIC study for an individual tariffed service shall include all service specific costs (e.g., expenses of billing, marketing, customer service or service specific taxes) related to the provision of the service that are not included in the costs for the BNFs.
 - (3) **Exclusion of common costs.** The LRIC study for an individual tariffed service shall exclude any costs that are common costs (as defined in subsection (c)(5) of this section). Specifically, the individual LRIC studies for residential and business basic local exchange service, as these services are tariffed on the effective date of this section, shall exclude any volume insensitive costs associated with the use of the Network Access Channel Basic Level (as defined in subsection (e)(1)(A) of this section) and Network Access Channel Connection Basic Level (as defined in subsection (e)(2)(A) of this section).
 - (4) **Relevant increment of output.** For the purposes of this subsection, the relevant increment of output, as that term is used in subsection (c)(16) of this section, shall be the level of output necessary to satisfy current demand levels for the service. Adjustments to total service output may be made to reflect the presence of new services for which demand levels can demonstrably be anticipated to increase significantly over the course of six months.
 - (5) **Relating expenses to services.** The company shall avoid the use of embedded cost data and shall determine expenses consistent with the principles of long run incremental costing.
 - (A) **Common expenses.** Common expenses that are not directly attributable, using the cost causation principle, to the service shall be excluded.
 - (B) **Nonrecurring expenses.** The expenses of nonrecurring activities shall be separately identified.
 - (C) **Taxes.** Any tax expenses not directly attributable, using the cost causation principle, shall be excluded from the LRIC study for individual services.
 - (6) **Least cost technology.** LRIC studies shall assume the use of least cost technology. The choice of least cost technologies, however, shall:
 - (A) be restricted to technologies that are currently available on the market and for which vendor prices can be obtained;
 - (B) be consistent with the level of output necessary to satisfy current demand levels for all services using the BNF in question; and
 - (C) be consistent with overall network design and topology requirements.
 - (7) **Network topology.** LRIC studies shall use the existing or planned network topology.
 - (8) **Cost of money.** When the company uses the most recent commission approved rate of return for the company, as that term is used in §23.21(c)(1) of this title (relating to Cost of Service) there will be a presumption of reasonableness. The company shall justify the use of any other rate.
 - (9) **Rate of depreciation.** When the company uses the most recent commission approved rate of depreciation for the company there will be a presumption of reasonableness. The company shall justify the use of any other rate.
- (h) **Identification of BNFs and groups of services that share significant common costs and calculation of such common costs.** The company shall identify all instances in which BNFs and groups of services share significant common costs and calculate such common costs.

- (1) **Costs common to BNFs.** The company shall identify and calculate for each subcategory of BNFs and category of BNFs significant costs that are common to BNFs (as defined in subsection (c)(5)(B) of this section). Costs common to BNFs shall only be identified and calculated at the level of subcategories of BNFs and/or categories of BNFs.
 - (2) **Costs common to groups of services.** The company shall identify and calculate all significant common costs and the groups of services that share those common costs (as defined in subsection (c)(5)(C) of this section).
The calculation of common costs required under paragraphs (1)-(2) of this subsection shall be consistent with the principles described in subsection (d) of this section and the instructions listed below.
 - (3) **Relevant increment of output.** When common costs are computed for BNFs or services, the relevant increment of output, as that term is used in subsection (c)(16) of this section, shall be the level of output necessary to satisfy current demand levels for the BNFs or the services. Adjustments to total service output may be made to reflect the presence of new services for which demand levels can demonstrably be anticipated to increase significantly over the course of six months.
 - (4) **Expenses.** The company shall avoid the use of embedded cost data and shall determine expenses consistent with the principles of long run incremental costing.
 - (A) **Nonrecurring expenses.** The expenses of nonrecurring activities shall be separately identified.
 - (B) **Taxes.** Any tax expenses not directly attributable, using the cost causation principle, shall be excluded from the cost studies for common costs.
 - (5) **Least cost technology.** The studies shall assume the use of least cost technology. The choice of least cost technologies, however, shall:
 - (A) be restricted to technologies that are currently available on the market and for which vendor prices can be obtained;
 - (B) be consistent with the level of output necessary to satisfy current demand levels for the BNFs or services in question; and
 - (C) be consistent with overall network design and topology requirements.
 - (6) **Network topology.** Cost studies shall use the existing or planned network topology.
 - (7) **Cost of money.** When the company uses the most recent commission approved rate of return for the company, as that term is used in §23.21(c)(1) of this title (relating to Cost of Service) there will be a presumption of reasonableness. The company shall justify the use of any other rate.
 - (8) **Rate of depreciation.** When the company uses the most recent commission approved rate of depreciation for the company there will be a presumption of reasonableness. The company shall justify the use of any other rate.
- (i) **LRIC studies for groups of tariffed services that share significant common costs.** The DCTU shall perform a LRIC study for each group of services identified under subsection (h)(2) of this section. Each group LRIC shall be calculated as the sum of the LRICs (as determined under subsection (g) of this section) for the services in the group and the common costs for those services (as identified under subsection (h)(2) of this section). Each LRIC study shall be consistent with the principles described in subsection (d) of this section. Additionally, the company shall use the following instructions in determining the LRIC for groups of services.
- (1) **Relevant increment of output.** When the LRIC is computed for a group of services, the relevant increment of output, as that term is used in subsection (c)(16) of this section, shall be the level of output necessary to satisfy current demand levels for the services in the group. Adjustments to total service output may be made to reflect the presence of new services for which demand levels can demonstrably be anticipated to increase significantly over the course of six months.
 - (2) **Relating expenses to groups of services.** The company shall avoid the use of embedded cost data and shall determine expenses consistent with the principles of long run incremental costing.
 - (A) **Common expenses.** Common expenses that are not directly attributable, using the cost causation principle, to the group of services shall be excluded.

- (B) **Nonrecurring expenses.** The expenses of nonrecurring activities shall be separately identified.
 - (C) **Taxes.** Any tax expenses not directly attributable, using the cost causation principle, shall be excluded from the LRIC study for the group of services.
 - (3) **Least cost technology.** LRIC studies shall assume the use of least cost technology. The choice of least cost technologies, however, shall:
 - (A) be restricted to technologies that are currently available on the market and for which vendor prices can be obtained;
 - (B) be consistent with the level of output necessary to satisfy current demand levels for all services using the BNF in question; and
 - (C) be consistent with overall network design and topology requirements.
 - (4) **Network topology.** LRIC studies shall use the existing or planned network topology.
 - (5) **Cost of money.** When the company uses the most recent commission approved rate of return for the company, as that term is used in §23.21(c)(1) of this title (relating to Cost of Service) there will be a presumption of reasonableness. The company shall justify the use of any other rate.
 - (6) **Rate of depreciation.** When the company uses the most recent commission approved rate of depreciation for the company there will be a presumption of reasonableness. The company shall justify the use of any other rate.
- (j) **Filing requirements for DCTU provided workplan.** Within 70 days of the effective date of this section, the DCTU shall file with the commission and the Office of Public Utility Counsel (OPUC) a plan for compliance with the provisions of this section. The workplan shall be consistent with the principles, instructions and requirements set forth in this section and shall be reviewed in accordance with the procedures established in subsection (m) of this section. The workplan submitted by the DCTU shall include the following components.
- (1) **Identification of BNFs and cost methodology.** The workplan submitted by the DCTU shall discuss the BNFs identified under this section and include a detailed discussion of the cost methodology the DCTU proposes to use for the studies required under this section. Additionally, the workplan shall meet the following requirements:
 - (A) **List of BNFs.** The workplan shall include a list of all BNFs that the DCTU has identified pursuant to subsection (e) of this section.
 - (B) **Additional BNFs.** If the DCTU proposes to identify BNFs in addition to the BNFs identified in subsection (e)(1)-(11) of this section, the workplan shall include a description of each of the BNFs that the DCTU proposes to identify, and a discussion of why these BNFs should be identified in addition to the BNFs identified in subsection (e)(1)-(11) of this section.
 - (C) **Definitions of BNFs.** For each BNF identified under subsection (e) of this section, the workplan shall include, a precise definition of the BNF, including the points of demarcation in the DCTU's network between each BNF and other BNFs.
 - (D) **Diagrams.** For each BNF identified under subsection (e) of this section, the workplan shall include a diagram that illustrates the BNF's role in the provision of DCTU services.
 - (E) **Least cost technology choices for BNFs.** For each BNF identified under subsection (e) of this section, the workplan shall identify which technology or technologies (e.g., fiber optic cable, digital switching systems) will be considered the least cost technology (as defined in subsection (c)(14) of this section) for the BNF.
 - (F) **Identification of investments.** The workplan shall include a discussion of the methodology that the DCTU proposes to use in identifying investments associated with each of the BNFs identified under subsection (e) of this section.
 - (G) **Data sources.** For each BNF identified under subsection (e) of this section, the workplan shall include a discussion of the data sources to be used in developing the costs of the BNF.
 - (H) **Service demand.** For each BNF identified under subsection (e) of this section, the workplan shall include a discussion of the data sources to be used for service demand in developing the costs of the BNF.

- (I) **Automated cost models.** The workplan shall include a description of any automated cost models which the DCTU proposes to use in developing the cost of the BNF. For each such automated cost model, the workplan shall provide a detailed description of the algorithm of the cost model and demonstrate that the methodology of the cost model is consistent with the long run incremental cost methodology described in this section.
- (J) **Flowcharts.** For each type of cost study required under this section, the workplan shall include a detailed flowchart that identifies all models used in the study and the interrelationships between the inputs and outputs of the models.
- (K) **List of cost drivers.** For each BNF identified under subsection (e) of this section, the workplan shall identify the cost drivers that the DCTU has identified pursuant to subsection (f)(10) of this section.
- (L) **Additional cost drivers.** If the DCTU proposes to identify and account for cost drivers in addition to the cost drivers identified in subsection (f)(10)(A)-(G) of this section, the workplan shall include a description of each of the cost drivers that the DCTU proposes to use, and a discussion of why these cost drivers should be used in addition to the cost drivers identified in subsection (f)(10)(A)-(G) of this section.
- (M) **Loading factors.** The workplan shall include a discussion of the methodology that the DCTU proposes to use in identifying operating expenses, depreciation and taxes relating to each of the BNFs identified under subsection (e) of this section.
- (N) **Categorization of BNFs.** For each BNF identified under subsection (e) of this section, the workplan shall identify the category and subcategory of BNFs (as defined in subsection (c) of this section) under which the BNF is categorized.
- (O) **Mapping from BNFs to tariffed services.** For each BNF identified under subsection (e) of this section, the workplan shall include a list of all tariffed services that use the BNF.
- (P) **Mathematical representation.** The workplan shall include a formal mathematical statement describing the cost relationships between BNFs, tariffed services, and groups of tariffed services. This statement shall translate the principles, instructions and requirements of this section into the traditional mathematical terms used in the economic literature. Specifically, the company shall include a mathematical statement that describes the functional relationship between the long run incremental costs for a tariffed service and a service's use of BNFs.
- (2) **Identification of costs common to BNFs.** The workplan submitted by the DCTU shall identify which BNFs share common costs and the sources of the common costs (as identified under subsection (h)(1) of this section).
- (3) **Identification of groups of services.** The workplan submitted by the DCTU shall include a list of all groups of services that the DCTU has identified pursuant to subsection (h)(2) of this section. The list shall meet the following requirements:
 - (A) **Identification of services in groups.** The list shall identify for each group the services that are included in the group. When the group contains smaller groups of services, the smaller groups that are included in the group shall be identified.
 - (B) **Identification of BNFs that represent common costs.** The list shall identify the BNFs that represent the common costs for each group of services.
 - (C) **Identification of other common costs.** The list shall identify other sources of common costs for each group of services (as identified under subsection (h)(2) of this section).
- (4) **Proposed schedule for completion and filing of cost studies.** The workplan submitted by the DCTU shall include a proposed completion and filing date for: the LRIC study for each BNF identified under subsection (e) of this section, including the required BNFs specified in subsection (e)(1)-(11) of this section; the LRIC study for each tariffed service offered by the DCTU; and the LRIC study for each group of services identified under subsection (h) of this section. The proposed schedule submitted by the DCTU shall meet the following requirements:
 - (A) If the schedule proposed by the DCTU would result in completion of any cost study later than 18 months following September 10, 1993, the DCTU should discuss in detail the reasons why the cost study may not be completed within 18 months.
 - (B) In no event should the schedule proposed by the DCTU result in the completion of any cost study later than thirty months following September 10, 1993.

- (C) The schedule proposed by the DCTU should space the completion and filing of cost studies relatively evenly over the course of the period of time allowed for completing the studies and avoid, to the greatest degree possible, the filing of large quantities of studies at any one date.
 - (D) The schedule proposed by the DCTU shall not result in completion of any LRIC study for a tariffed service before the completion of the LRIC studies for all the BNFs that are used in the provision of the tariffed service.
- (5) **Prototype LRIC studies for BNFs, tariffed services, and groups of tariffed services.** The workplan shall provide prototype LRIC studies for BNFs, tariffed services, and groups of tariffed services, to serve as models for the studies filed pursuant to this section. In devising the prototype studies the DCTU shall consider the following instructions.
 - (A) **Completeness.** The prototype LRIC studies shall be structured to provide for all information (e.g., inputs, outputs, assumptions) necessary to understand the studies and to reasonably verify their accuracy.
 - (B) **Consistency and efficiency.** The company shall seek to organize the prototype studies in a manner that clearly demonstrates the relationships and consistencies between studies. To the extent that a number of studies use automated models, standardized loading factors or other standardized methods, the company shall propose a way of documenting these methods that reduces unnecessary duplication.
 - (C) **PC-based spreadsheets and open algorithms.** The company shall create the prototype studies both on paper and on personal computer based electronic spreadsheets. In designing the personal computer based electronic spreadsheet versions the company shall seek to create an open algorithm that can be used and modified by the commission staff and other users.
- (6) **Waiver requests.**
 - (A) **Waiver for required BNF.** The workplan shall include a request for waiver if the company finds that a required BNF specified in subsection (e)(1)-(11) of this section is inappropriate for its network. The waiver request shall be accompanied by a statement demonstrating why the required BNF is inappropriate.
 - (B) **Waiver for required cost driver.** The workplan shall include a request for waiver if the company finds that a required cost driver specified in subsection (f)(10)(A)-(G) of this section is inappropriate for its network. The waiver request shall be accompanied by a statement demonstrating why the required cost driver is inappropriate.
 - (C) **Waiver for required LRIC studies for individual tariffed services.** The workplan shall include requests for waivers for those services for which the company proposes to not perform a LRIC study.
- (7) **Proposal for the treatment of information designated as confidential or proprietary.** The workplan submitted by the DCTU shall include the DCTU's proposal for the treatment of information to be filed pursuant to this section that the DCTU designates or intends to designate as confidential and/or proprietary. The DCTU shall include the following information:
 - (A) **Identification.** Identification of the information to be filed pursuant to this section (e.g. cost models, algorithms, data) that the DCTU will designate as confidential and/or proprietary.
 - (B) **Explanation.** For each item identified in subparagraph (A) of this paragraph, an explanation supporting the DCTU's designation of information as confidential and/or proprietary.
 - (C) **Proposal.** The DCTU's proposal for the treatment of information designated by the DCTU as confidential and/or proprietary that the DCTU will file pursuant to this section (e.g., a proposed protective agreement).
- (k) **Requirements for initial filings of LRIC studies.** The DCTU shall file with the commission and OPUC the LRIC studies required under this section. The LRIC studies shall be consistent with the principles, instructions, and requirements set forth in this section and shall be reviewed in accordance with the procedures established in subsection (n) of this section. In accordance with the workplan, and the waivers therein, approved under subsection (m) of this section, the DCTU shall file LRIC studies for: